

CLAIMS

What is claimed is:

1. A non-human transgenic animal comprising a transgene encoding a fatty acid desaturase.
2. The transgenic non-human animal according to Claim 1, wherein said animal is a mammal.
3. The transgenic non-human animal according to Claim 2, wherein said mammal is an ungulate.
4. The transgenic non-human animal according to Claim 1, wherein said animal is poultry.
5. The transgenic non-human animal according to Claim 1, wherein said transgene is chromosomally integrated.
6. The transgenic non-human animal according to Claim 1, wherein said transgene comprises a coding sequence for a stearyl-CoA desaturase operably linked to an animal tissue specific promoter.
7. The transgenic non-human animal according to Claim 6, wherein said animal tissue specific promoter is a mammary specific promoter.
8. The transgenic non-human animal according to Claim 6, wherein said animal tissue specific promoter is an intestinal epithelium specific promoter.
9. An expression cassette comprising a coding sequence for a stearyl-CoA desaturase operably linked to a heterologous mammalian tissue-specific promoter.

10. The expression cassette according to Claim 9, wherein said heterologous tissue specific promoter is a mammary specific promoter.

11. The expression cassette according to Claim 9, wherein said heterologous tissue specific promoter is an intestinal epithelium specific promoter.

12. The expression cassette according to Claim 9, wherein said expression cassette is present in a vector.

13. A method for producing a non-human transgenic animal comprising a fatty acid desaturase transgene, said method comprising:

- (a) introducing a desaturase transgene into a single-celled embryo, forming a genetically modified embryo; and
- (b) transferring the genetically modified embryo into a recipient female of the same species as the embryo, wherein the genetically modified embryo develops into a transgenic animal in the female.

14. The method according to Claim 13, wherein said transgenic animal is chosen from a mouse, a rat, a rabbit, a pig, a sheep, a goat, poultry, and a cow.

15. The method according to Claim 13, wherein the transgenic animal is a mammal, and said transgene is expressed in mammary gland cells of said mammal.

16. The method according to Claim 13, wherein the transgenic animal is a mammal, and wherein said transgene is expressed in intestinal epithelium cells of said mammal.

17. The method according to Claim 13, wherein the desaturase transgene is a stearoyl-CoA desaturase transgene.

18. A method for producing a non-human transgenic animal comprising a fatty acid desaturase transgene, said method comprising:

- a) introducing a desaturase transgene into a somatic cell, forming a genetically modified somatic cell comprising a genetically modified nucleus;
- b) transferring the genetically modified nucleus from the genetically modified somatic cell into a single-celled embryo, generating a genetically modified single-celled embryo; and
- c) transferring the genetically modified single-celled embryo into a recipient female of the same species as the embryo, wherein the genetically modified embryo develops into a transgenic animal in the female.

19. The method of claim 18, wherein the desaturase transgene is a stearyl CoA desaturase transgene.

20. A method of producing a food product, said method comprising harvesting a food product from a non-human transgenic animal of Claim 1.

21. A method of producing a food product, the method comprising processing a food product harvested from a non-human transgenic animal of Claim 1.

22. A food product harvested from a non-human transgenic animal of Claim 1.

23. The food product according to Claim 22, wherein the food product is processed.

24. The food product according to Claim 22, wherein said food product is milk.

25. The food product according to Claim 22, wherein said food product is meat.

26. The food product according to Claim 22, wherein said food product is an egg.

27. The food product according to Claim 22, wherein the food product has from about 10 to about 67 weight percent saturated fatty acids.

28. The food product according to Claim 22, wherein the food product has from about 27 to about 80 weight percent monounsaturated fatty acids.

29. The food product according to Claim 22, wherein the food product has from about 7.5 to about 25 weight percent polyunsaturated fatty acids.

30. The food product according to Claim 22, wherein the food product has from about 0.400 to about 50 weight percent conjugated linoleic acid.